

manner, causing it to collect on either side of an animal membrane, at pleasure, although no other liquid is there to receive it.

"9th. The penetrativeness of gases for each other seems to vary in velocity, but not in force.

"10th. Reference to the above-mentioned law and modifying agencies enable us to explain many phenomena hitherto imperfectly understood. We, by means of them, comprehend the uniform constitution of mixed gases in any vessel, or in the atmosphere, notwithstanding the greatest difference in specific gravity. It explains the diffusion of odours, the nature and progression of caloric under slow conduction. It affords us new views of the theory of respiration, and accounts, in that process for some well ascertained facts, for which there previously existed no adequate explanation.

"It shows us how emphysema and tympanitis may happen without secretion of gases, or lesion of tissue, and how a spontaneous cure may be produced. It leads to the probability of the existence of gaseous matter of very various kinds, in almost every part of the animal frame, resident there molecularly, and *en masse*, but susceptible of being collected into mass in the great cavities of the cells of the tissue, or blood-vessels by mechanical or electrical influence, or the attractive interstitial agency of other masses of air.

"It teaches the important truth, that water is the great general infiltrator and diluent, a knowledge of whose habitudes will be thus rendered more clear and more useful."

B.

XI. *Caspar Hauser. An account of an Individual kept in a Dungeon, separated from all Communication with the World from early Childhood to about the Age of Seventeen. Drawn up from Legal Documents. By ANSELN VON FEUENBERG, President of one of the Bavarian Courts of Appeal. Translated from the German. Boston. Allen & Ticknor. 1832, pp. 178. 12mo.*

Many of our readers doubtless recollect to have seen, in the papers of the day, an account of an individual who it was represented, had been found in Nuremberg in a condition which left his previous life enveloped in the greatest mystery. This individual is the subject of the present short, but extraordinary narrative, which may be truly termed a romance of real life. To the physiologist and metaphysician it is a most invaluable record, as shewing a new and most unforeseen light on some of the most intricate questions connected with the development of the human mind.

We shall not attempt to follow the history of this unfortunate being, except as connected with circumstances which fairly come within the design of a medical work. All that may be necessary to state at present is, that when Hauser was found, he appeared to be about sixteen or seventeen years of age, had never learned to speak, and that in all probability he had been shut out during his whole life from all communication with the world, in a narrow, dark dungeon, in which he was always obliged to remain in a sitting posture, that his food had invariably been bread and water; in fact, that he had enjoyed a mere animal existence.

"Light had never shown upon this being, either on his eye or on his soul; and when he emerged from his lonesome darkness, he was like a new-born child in respect to all which must be acquired by experience, whilst the instruments for acquiring that experience, the natural faculties, of course differed from those of a child so far as they were affected by the mere age or growth of the individual."

His physical appearance when he appeared at Nuremberg is thus detailed. He was four feet nine inches in height, and about sixteen to seventeen years old. His chin and lips were very thinly covered with down; the dentes sapientie were wanting. His skin was fine and very fair; his limbs were delicate, and his feet showed no marks of having ever been confined by a shoe. His face was almost without expression, except that of a brutish obtuseness. He scarcely knew how to use his hands or fingers. His gait was like the first attempts of an infant to walk.

A medical examination was ordered to be made, the results of which, as stated by Dr. Osterhausen in his report, present some curious anatomical details. The patella, instead of forming a prominence, lay in a hollow. The tendons of the two vasti muscles were separately inserted into the tibia. From this peculiar formation, when Hauser sat down, with his leg and thigh extended horizontally on the floor, his body formed a right angle with the thigh, and the knee-joint was applied so closely to the floor as to prevent the passage of even a card beneath it.

He constantly evinced the strongest aversion to all kinds of meat and drink, and would only partake of bread and water. Even the smell of other food affected him disagreeably. The ingestion of the smallest quantity of wine, or coffee, occasioned him cold sweats and vomiting; even milk disordered his stomach. He was in possession of but two words, which he used to designate living beings; whatever appeared in the human form he called "bua," and to every animal he gave the name of "ross," (horse.) When first found, not only his mind, but most of his senses were in a state of torpor, but his nervous excitability was soon developed in an extraordinary degree; thus, the beating of a double drum near him threw him into convulsions. Not a spark of any religious belief was to be discerned in him.

The account which he gave of himself was as follows:—

"He neither knows who he is nor where his home is. It was at Nuremberg that he first learnt that besides himself and 'the man with whom he had always been,' there existed other men and creatures. As long as he can recollect, he had always lived in a hole, (a small, low apartment, which he sometimes called a cage,) where he had always sat on the ground with bare feet, and clothed only with a shirt and pair of breeches. In his apartment he never heard a sound, whether produced by man, by an animal, or by any thing else. He never saw the heavens, nor did there ever appear a brightening (daylight) as at Nuremberg. Whenever he awoke from sleep he found a loaf of bread and a pitcher of water by him. Sometimes this water had a bad taste; whenever this was the case he could no longer keep his eyes open, but was compelled to fall asleep; and when afterwards he awoke, he found he had a clean shirt on, and that his nails had been cut. He never saw the face of the man who brought him his meat and drink. How long he continued to live in this situation he knew not."

It appears from his imperfect narrative, that his keeper once came behind him, so as not to be seen, and guided his hand so as to make it write something, and soon afterwards placed him on his feet, and attempted to teach him to walk, and finally, that the man carried him out from his prison on his back; of his journey Hauser knew but little, except that he fainted several times during it.

The state of his mind during his confinement, as far as could be ascertained, must have "been that of a human being immersed in his infancy in a profound

sleep, in which he was not conscious even of a dream." In this condition he remained till he suddenly awoke, as it were, by the forcible impressions of external objects on his senses. He has no recollection of having ridden on his journey, though, from the deep sleep which riding always produces on him, this may have taken place. When he is asleep, noises appear to have no influence on him, and even rough treatment does not awaken him.

When first found, his saliva was as viscous as glue, but this afterwards became natural, on a change of food. He betrayed a great aversion to any glare of light, and his eyes were much inflamed. He was subject to spasmodic contractions on the left side of his body, especially when excited by any new object, or when his mind was deeply engaged, these spasms were succeeded by a state of nervous rigidity. With regard to colours, Hauser always preferred the most glaring. At first he had no idea of size or distance; thus when directed to look out of a window, he instantly drew back with repugnance, this he afterwards explained, by saying that it appeared as if the objects were close to his eyes. Drawings or paintings appeared to him as much relieved as if carved in wood.

It appears from a subsequent report of his medical attendant, that the multifarious impressions made upon his mind were too powerful, and produced a high state of nervous excitability.

"The muscles of his face were affected with frequent spasms. His hands trembled so much, that he was scarcely able to hold any thing. His eyes were inflamed, they could not bear the light. His hearing was so very sensible, that all loud speaking caused him violent pain."

He lost his appetite, and his gastric functions became disordered.

He was then removed to a quiet house, and no one permitted to see him. Here he, for the first time, slept in a bed, and began to dream. One of the most difficult undertakings was to accustom him to the use of ordinary food; this was a work of months, and it is a curious fact, that before he became accustomed to warm food, he was tormented with a constant thirst, drinking daily from ten to twelve quarts of water. After he became habituated to meat, his mental activity was diminished, his eyes lost their brilliancy and expression, and in short, his state of morbid excitement gradually disappeared. This change of diet had also a remarkable effect on the development of his body, as he gained two inches in height in a very few weeks.

It would be impossible for us to detail the various mental phenomena that the gradual development of his faculties occasioned; we may, however, mention a few of the most striking, as exemplifying how slowly the mind acquires habits of just comparison. Thus, it was a long time before he could comprehend the difference between animate and inanimate objects, and he conceived that every motion which took place in any object was spontaneous; thus, if a sheet was blown down by the wind, he thought that it had run away. He supposed that a tree manifested its life by moving its branches and leaves, and that the rustling of the latter, when agitated by the wind, was the voice of the vegetable. To animals, he for a long time ascribed the same as to men, and appeared to distinguish the one from the other only by the difference of their external form.

As to his sight, it was very peculiar, as he could see in the dark as perfectly as in the light; this was proved by numerous experiments; thus, in a perfectly

dark night, he could distinguish blue from green, &c. His sight was also extremely acute, both as to distance and nicety. His hearing was as remarkable; but of all his senses, that which was the most troublesome to him, and which rendered his life miserable, was that of smell. What to all other persons was entirely senseless, was not so to him. The odour of a rose overcame him; in fact, every smell except those of bread, fennel, anise and caraway, were more or less disagreeable to him. He could distinguish fruit trees from each other at a considerable distance by the smell of their leaves. The odour of old cheese made him feel unwell, and caused vomiting. What are considered by most persons as unpleasant smells, were much less offensive to him than what we consider as agreeable perfumes.

There is a fact connected with this acuteness of smell, which settles the question of the emanations from burying grounds; when he walked near a church yard, the smell from it which was not perceptible to any one else, occasioned him a complete paroxysm of fever.

One of the most extraordinary peculiarities of Hauser's temperament was his susceptibility to magnetic and metallic excitements. A toy was given him furnished with a magnet, this he would not use, as he complained it occasioned him unpleasant sensations. On learning this fact Professor Daumer made some experiments on him with a magnet. When the north pole was presented to him, he complained of pain in his stomach, and that a current of air appeared to flow from him towards the magnet; the south pole had less effect on him. These experiments were varied as much as possible, but he was never deceived. In respect to his sensibility of the presence of metals, and his ability to distinguish them by his feelings, many instances are adduced. He described his sensations of the contact of metals, as a feeling of drawing or attraction, which passed over him, accompanied at the same time with a chill, which ascended according as the objects were different, more or less up the arm. This sensibility he gradually lost. When he caught a cat by the tail, he was seized with a strong fit of shivering, and felt as if he had received a blow upon the hand.

His present state is thus described.

"His mode of life is that which is common to most men. With the exception of pork, he eats all kinds of meat, if not seasoned with hot spices. His favourite condiments still are caraway, fennel and coriander. His drink continues to be water, and only in the morning he takes a cup of unsweetened chocolate instead of it. All fermented liquors, beer and wine, as also tea and coffee, are still an abomination to him; and, if a few drops of them were forced upon him, they would infallibly make him sick.

"The extraordinary, almost preternatural elevation of his senses, has also been diminished, and has almost sunk to the common level. He is indeed still able to see in the dark; so that, in respect to him, there exists no real night, but only twilight; but he is no longer able to read in the dark nor to recognise the most minute objects in the dark at a great distance; whereas he was formerly able to see much better and more distinctly in a dark night than by daylight, the contrary is now the case. Like other men, he is now able to bear, and he loves the light of the sun, which no longer distresses his eyes. Of the gigantic powers of his memory and other astonishing qualities not a trace remains. He no longer retains any thing that is extraordinary, except his wonderful fate, and the gentleness of his disposition."

In the above abstract we feel that we have not given as connected a view
No. XXIII.—May, 1833. 18

of the operations of Hauser's feelings and mental faculties as they were gradually acted on, and developed by the action of external objects, as could have been wished, this however our limits prevented, and we must therefore refer such of our readers as wish for more information, to the work itself, which will amply repay an attentive perusal.

R. E. G.

XII. *An Essay on the Structure and Functions of the Skin; with Observations on the Agency of Atmospheric Vicissitudes, through the Medium of the Skin, in the production of Affections of the Lungs, Liver, Stomach, Bowels, &c.* By WILLIAM WOOD, M. D. Member of the Royal College of Surgeons of London, and Physician to the Newport Dispensary. Edinburgh, 1832. Octavo. pp. 172.

The agencies exerted by and through the skin, considered in reference to the healthy and morbid conditions of the animal economy, are so important as to give to the study of the structure and functions of the external covering a strong claim to our attention. The cutaneous texture is, in fact, the link which connects our system with the external world, and through which we make the acquaintance of all physical matter. Besides its nervous relations, it exercises the important functions of perspiration and absorption, with the actions of cicatrization and the formation of inorganic coverings.

The author's inquiries relative to the extent to which the two functions of absorption and transpiration are carried on, are among the most interesting presented to us. With regard to the latter function, he details the most important experiments heretofore tried: those for example of Lavoisier and Seguin, which brought those able chemists to the conclusion, that the whole loss by the skin and lungs in the latitude of Paris, at its minimum, is nearly 9 grains, troy, per minute, and at its maximum nearly 26 grains, troy. Taking the mean of the two sums mentioned for the average quantity, we find this for the twenty-four hours to be about 54 ounces. Of the entire loss, the proportion from the pulmonary surface is estimated at one-third, whilst two-thirds pass off by the skin; that is to say, 18 ounces, troy, pass off daily by the lung, and 36 ounces by the skin.

In these experiments the naked body was introduced into an air-tight bag, made of silk varnished with elastic gum; whilst breathing was maintained through a tube, the funnel end of which was glued around his lips, the other extremity passing out of the bag, so as to prevent all communication between its interior and the mouth. The difference between the weight of the body, before it was enclosed in this apparatus, and its weight after being divested of it, showed the whole loss, in a given time, both by the skin and lungs. The difference between the weight of the body immediately after it was enveloped in the bag, and just before it was divested of it, exhibited the loss by respiration, which quantity subtracted from the amount of the whole loss showed the proportion by the skin alone.

The objection made by our author to this experiment, is one in which we fully agree with him, namely, that notwithstanding its ingenuity and apparent accuracy, it is questionable whether the state of the body whilst enclosed in an air-tight bag, is sufficiently near to the ordinary circumstances of existence, to induce us to adopt the conclusion without some modification or allowance.

No experiments, he thinks, are to be relied on, as exhibiting the true extent